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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,169	07/09/2003	Mitsuo Kawasaki	9281-4597	1104

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EXAMINER	
LEADER, WILLIAM T	

ART UNIT	PAPER NUMBER
1742	

DATE MAILED: 10/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/616,169	KAWASAKI ET AL.	
	Examiner	Art Unit	
	William T. Leader	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 25-37 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 25-37 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 10/042,085.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims 36 and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The language of claim 36 is indefinite because the scope of the claim cannot be easily determined. Claim 36 recites appears to recite that not only does "one of" the lower or upper core layers comprise 2 magnetic layers, but also one of the upper or lower magnetic pole layers also comprises 2 magnetic layers. It is unclear if these are the same layers of different layers or if the at least 2 magnetic layers of the core comprise the pole layers previously recited.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 25-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikawa et al (6,132,892) in view of either Anderson et al (4,661,216) or Omata (5,011,581) and further in view of Lee et al (6,346,181) and the article "Plating with Pulsed and Period-Reverse Current) by Sun et al.

4. Yoshikawa et al disclose a soft magnetic film having a composition represented by the formula $Co_xFe_y\alpha_z$ (the element α is at least one of Ni and Cr)(column 22, lines 38-55), wherein the component ratio X of Co is 8 to 48 mass%, the component ratio Y of Fe is 50 to 90 mass%, the component ratio Z of the element α is 2 to 20 mass%, and the equation X+Y+Z=100 mass% is satisfied (Table 6, samples 2 and 5).

5. Claim 25 differs from Yoshikawa et al by reciting that the soft magnetic file is formed by electroplating using a pulse current.

6. Anderson et al disclose (Abstract) that ternary alloys containing cobalt, nickel and iron can be formed by electroplating. Omata similarly teaches (Abstract) that ternary FeCoNi alloy films can be formed by electrodeposition. Lee et al disclose that it is known to form deposits using direct current or pulse current or periodic reverse current. See column 4, lines 23-25. The article by Sun et al discloses (Abstract) the pulse plating provides deposits with improved properties.

7. The prior art of record is indicative of the level of skill of one of ordinary skill in the art. It would have been obvious at the time the invention was made to have utilized pulsed electroplating to deposit the magnetic layers of Yoshikawa et al because it is known that electroplating effectively produces tertiary magnetic alloys as shown by Anderson et al and Omata, and that pulsed current may be used in place of direct current to provide deposits with improved properties as shown by Lee et al and Sun et al.

8. With respect to claims 26-28 it would have been obvious to one having ordinary skill in the art to have determined the optimum value of a cause effective variable such as the relative alloy concentrations through routine experimentation.

9. With respect to claim 32, Yoshikawa et al disclose a thin film magnetic head comprising: a lower core layer composed of a magnetic material (figure 10, elements 27, 27a and 33), an upper core layer (elements31a, 33 and 34 formed above the lower core layer with a magnetic gap therebetween (element 30), and a coil layer (figure 6, element 32), wherein one of the lower core layer and the upper core layer is formed of the claimed soft magnetic film (column 17, lines 8-27, element 33). The limitation "for supplying a . . . upper core layer" is an intended use limitation and is not further limiting in so far as the structure of the product is concerned. In apparatus, article, and composition claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. See MPEP 2111.02. In the instant case, the coil layers are capable of performing the intended use since it is old in the art that the coil layers apply a recording magnetic field to the lower and upper core layers and the prior art coil layer is substantially identical composition to applicant's disclosed coil layers (column 15, lines 57-67).

10. With respect to claim 14, "a bulged lower magnetic pole" is interpreted based on applicant's disclosure (page 39 and figure 7), which appears to simply recite an additional "pedestal" layer (figure 5, element 50). Yoshikawa et al disclose a structure meeting applicant's claimed limitations (figures 7 and 8, element 27a). Yoshikawa et al does not explicitly disclose the limitation "at a face opposing a recording medium thereof." However, given figures 6 and 12, as well as the relevant description thereof (column 17, lines 28-61) combined with the knowledge that the MR element (figure 6, element 2) is what reads information from a disk, the

disclosed limitation "so as to be exposed to an opposing surface opposing the recording medium:" would have inherently been met by the embodiments disclosed in figures 6-8, 10 and 12.

11. With respect to claim 34, Yoshikawa et al disclose a magnetic pole portions (elements 33./30/33) provided between the lower core layer (element 27 and the upper core layer (element 34), a width track direction of the magnetic pole portion being formed smaller than that of either of the lower and upper core layers (figures 7 and 8), wherein one of the magnetic pole portions comprises a lower magnetic pole layer in contact with the lower core layer (elements 27a/33), an upper magnetic pole layer in contact with the upper core layer (elements 31a.33), and a gap layer lying between the lower magnetic pole layer and the upper magnetic pole layer (element 30), at least one of the upper magnetic pole layer or the lower magnetic pole layer is formed of a soft magnetic film meeting applicant's claimed limitations (column 16, lines 20-49 and column 17, lines 8-28). With respect to claim 35, Yoshikawa et al disclose forming the upper core layer of NiFe (column 16, lines 20-30).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William T. Leader whose telephone number is 571-272-1245. The examiner can normally be reached on Mondays-Thursdays and alternate Fridays, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WL
William Leader
September 20, 2005

ROY KING
SUPERVISORY PATENT EXAMINER
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